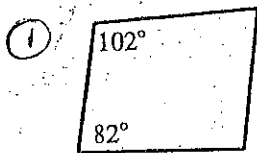
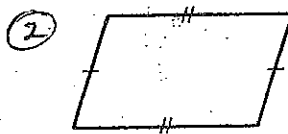


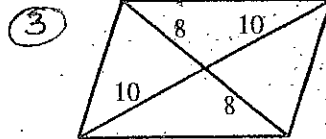
Determine whether each quadrilateral must be a parallelogram. Justify your answers.



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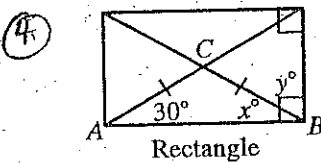


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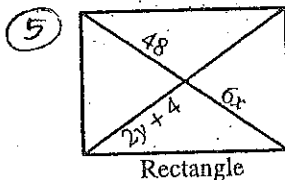


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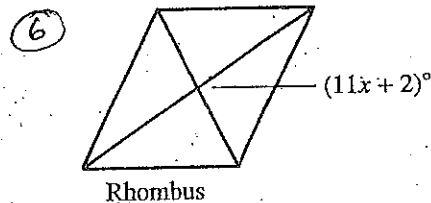
Find the values of  $x$  and  $y$  for each quadrilateral.



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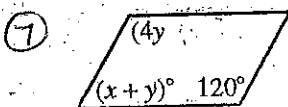


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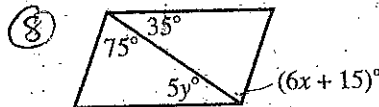


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What values of  $x$  and  $y$  guarantee that each quadrilateral is a parallelogram?

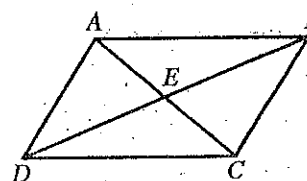


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Consider the quadrilateral  $ABCD$ . What values of  $x$  and  $y$  will guarantee that it is a parallelogram?



⑨  $m\angle BAD = m\angle BCD = (3x)^\circ$  and  $m\angle ADC = (2x)^\circ$ ,  $x =$  \_\_\_\_\_

⑩  $AB = 3x$ ,  $CD = 2x + 4$ ,  $BC = 7y - 2$ ,  $AD = 4y + 7$ ,  $x =$  \_\_\_\_\_  $y =$  \_\_\_\_\_

⑪  $AE = 17$ ;  $BE = 3x - 5$ ;  $CE = 2y + 5$ ;  $DE = 2x + 4$ ,  $x =$  \_\_\_\_\_  $y =$  \_\_\_\_\_

Solve for  $x$  &  $y$

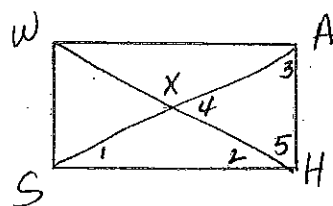
⑬  $y = -2x + 9$   
 $3x - 4y = 8$

⑭  $-2x - 3y = 10$   
 $x - y = 5$

Factor

⑮  $x^2 + x - 20 = 0$

⑯  $x^2 + 2x = 3$



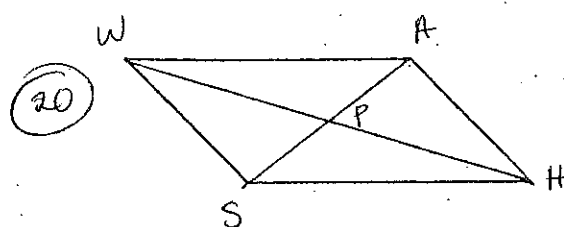
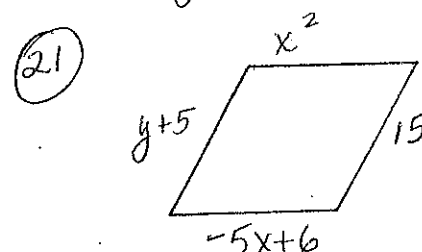
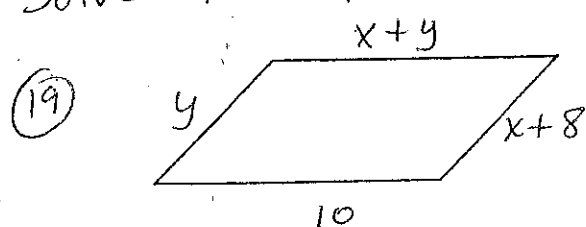
In Rectangle W A H S

(16)  $\angle 5 = 30^\circ$   
 $\angle 2 = ?$

(17)  $WX = 10$   
 $AX = ?$

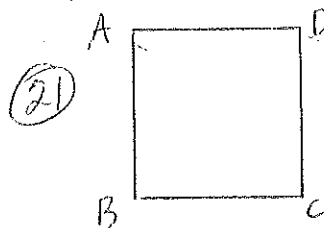
(18)  $\angle 3 = 2x^\circ$   
 $\angle 4 = 14x^\circ$   
 $x = ?$

Solve for  $x$  &  $y$  so that each figure is a parallelogram



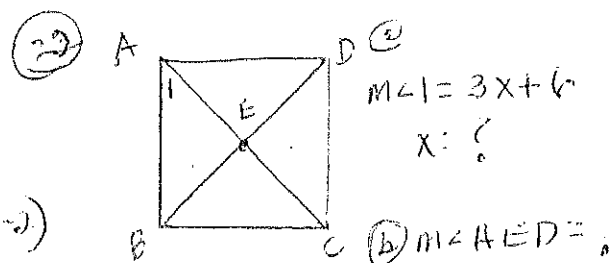
$WP = 10$   
 $AP = 3x + 4y$   
 $PH = x + 2y$   
 $PS = 8$

In Square ABCD



$AB = 4$   
 $BC = 5$   
 $DB = ?$

(23) Is  $\square WXYZ$  a parallelogram?  
 a rectangle?  $W(5,6)$   $X(9,0)$   $Y(8,-5)$   $Z(3,-2)$



$m\angle 1 = 3x + 6$   
 $x = ?$

(23)  $m\angle AED = ?$